Grantiss D.W.

CROUPOUS PNEUMONIA.





With the Compliments of the Author.

A CONTRIBUTION

TO THE

CLINICAL HISTORY

OF

CROUPOUS PNEUMONIA.

A report of Eleven Cases of Croupous Pneumonia occurring in private practice between the dates of Feb. and June, 1878.

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Croupous pneumonia is an endemic disease belonging to the class of infectious diseases.

It is only of comparatively recent date that the nature of this disease has been correctly understood, nor indeed is it even now admitted by all writers that the above proposition is true.

To Austin Flint in this country, and Meinyer Jürgensen and others in Europe, is due especial credit for pointing out with clearness the natural history of croupous or "lobar" pneumonia, and showing it to be a self limited disease, of constitutional character, in which the local inflammation in the ling is but a symptom of the general disturbance—just as is the affection of Peyer's patches in typhoid fever, or the skin cruptions in the exanthemata. The onset of croupous pneumonia is almost always sudden, preceded by a chill, in which it corresponds with other zymotic diseases. The lung lesion frequently does not appear until the 2d or 3d day—and then bears no constant relationship to the severity of the fever. The fever is regular

in its course with morning decline and evening exacerbation. At the sudden crisis, about the 7th day, the pneumonic inflammation often continues unabated, as indicated by the physical signs and quickened respiration—but the fever utterly disappears—the pulse and temperature becoming normal, and the appetite returning.

The disease is most prevalent in the presence of its exciting causes, chief of which is exposure to cold, wet weather; but we cannot believe, reasoning by analogy, that these conditions alone are sufficient to produce it.

In the cases reported below, no connection whatever existed between them, nor with any other case as far as could be ascertained; yetthere are instances occurring continually in the practice of physicians, that look suspiciously as though an element of contagion was present. Two or three years since I was called to a case of croupous pneumonia in a child—in a family of four children, all under the age of eight years. The parents were wealthy and the children hearty and robust—well cared for in a warm comfortable house, where they had the least possible exposure to cold. When the first child had been sick four or five days, the other three were all taken down at once with the same disease. All the cases ran the typical course to recovery.

Again in the winter of 1876 and 1877, I noted a case in a child 10 years of age, coming on without any unusual exposure to cold, and running the regular course to crisis on the 7th day and prompt recovery. Just at the time of the crisis a younger brother, aged 6 years, was attacked with the same sequence of symptoms and result.

These latter two cases made the greater impression, that my interest in them was closer than a merely professional one, and I was watching them night and day. Such cases create the suspicion that the disease is contagious, though only to a faint degree, and indicate that the period of incubation is a short one—from 4 to 7 days. If it is contagious, analogy would suggest the sputa from the diseased lungs as the principal source of contagion, just as are the enteric discharges of typhoid fever and cholera.

It would be inappropriate in an article of this description to

enter into a discussion of the diagnosis between croupous and catarrhal pneumonia, albeit the differences between the two present the strongest argument in favor of the zymotic character of the former.

Catarrhal pneumonia presents a picture exactly the opposite of that given above, except only as to physical signs—the insidious approach, the irregular character of the fever, no definite course, and especially the close sympathy between the lung disease and the general symptoms.

CASE I .- Croupous Pneumonia at Base of both Lungs in an Adult.

Mrs. S., Irish, 48 years of age; stout, healthy woman, who has had no sickness for many years.

February 28th, 1878.—Chill in evening, followed by fever and eough, after prolonged exposure to cold.

March 2d.—First saw the patient at 6, P. M., in bed, suffering no pain, but feeling sick and distressed. Carefully examined lungs, but could detect no sign of disease. Has occasional cough.

DATE.	Day of Disease.	Pulse.	Tempera-	Respira'n	Pulse respiration ratio.	TREATMENT AND REMARKS.
March 2, A. M March 3, A. M		96 96	102	23	$\frac{1}{3.44}$	Still no crepitant rale.
March 4, A. M	. 5	96	105	28	$\frac{1}{3.44}$	Abundant crepitus at base of right lung; slight crepitus at base of left lung. Ordered quin. sul. grs. xx at one dose; carb. ammon.
March 5, A. M	6	100	104	32	1 3.13	nixt.; milk and beef tea. Repeat quinine. Continue treatment. Oiled silk shirt.
March 6, A. M	. 7	108	105	28	$\frac{1}{3.36}$	Repeat quinine. Continue treatment.
March 7, A. M	. 8	100	103 5	32	$\frac{1}{3.13}$	Repeat quinine.
March 8, A. M	. 9	80	100.3	22	$\frac{1}{3.64}$	Quin. grs. ij. ter die ordered in place of dose of grs. xx.
March 9, A. M	. 10	80	98.5	16	$\frac{1}{5}$	Treatment continued. Profuse sweating.
March 11, A. M	. 12	80	99	15	$\frac{1}{5.33}$	Lung disease nearly disappeared.

This patient was only seen once daily, and the record is therefore only for the morning, and does not show the antipyretic effect of the quinine; but according to the report of the nurses, each dose was followed by relief to the patient and reduction of fever, the latter rising again in the early morning hours. On the night preceding the 4th of March she was extremely ill; so much so that she insisted she was dying, and had the priest summoned to administer the last sacrament. There was no return of this extreme illness after the administration of the first dose of quinine, although the temperature arose equally high subsequently. The whole twenty grains of quinine were given between three and four o'clock, P. M., each day, and their effect in reducing fever lasted twelve or fourteen hours.

The 5th, 6th and 7th days of the disease were the worst. Defervescence began on the 8th day from the initiatory chill occupying 48 hours, but was not complete until the 10th day, ending in profuse sweating. There was no sudden crisis.

Sweating still continued when attendance was closed, March 11th. The local disease was principally in the lower lobe of the right lung, posteriorly; the lower lower lobe of the left lung was slightly affected. There was no stage of complete hepatization, the erepitant rale being abundant during the whole course of the attack. Cough, expectoration and pain were insignificant. The pain complained of was in the right side, in front.

Recovery was prompt. Average pulse respiration ratio $\frac{1}{3.87}$.

CASE II .- Croupous Pneumonia of both Lungs in an adult.

James M., Irish, 37 years of age, stone polisher; is a drinking man; drinking by sprees, but sober in the interval; good constitution.

Was taken sick March 5th, 1878, with chill followed by pain in the left side in front, and sweating. Painful cough. Continued to work until March 9th. March 10th, first seen. Severe pain in cardiac region, causing dyspnæa and suppressed cough. Profuse sweating. Auscultation shows pneumonia in lower segment of left lung. Respiration in right side normal.

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DATE.	Day of Disease.	Pulse.	Tempera- ture.	Respira'n.	Pulse respiration,	SYMPTOMS, ETC.
March 10, A. M.	6	116	105	12	1 2.42	Rusty spnta; carb. ammon. gr. v every 4 honrs.
March 11, A. M.	7	116	105.7	36	3.22	Pain and dyspnœa very distressing. Quinine grs. xx at one dose.
March 11, P. M.	-	100	102	28	$\frac{1}{3.57}$	General condition greatly improved; cough and pain continue.
March 12, A. M.	8	104	104	28	3.71	Quinine grs. xx repeated; crepitation in lower lobe, right lung.
March 12, P. M.		100	102.7	32	3.12	Chloral grs. xx; morphia gr. 1, to relieve pain and produce sleep.
March 13, A. M.	9	112	105	44	2.54	Pain not relieved. Ordered bath at 85° for 10 minutes in wash tub, in place of quinine.
M'ch 13, 3 P. M.		108	101.5	30	$\frac{1}{3.60}$	Great relief.
M'ch 13, 9 P. M.		92	100.3	28	3.28	Repeated chloral and morphia.
March 14, A. M.	10	108	105	44	2.45	Fever rose again at 2, A. M.—14 hrs. after bath. Repeat bath and in addition quinine grs. xx.
M'ch 14, 5 P. M.		96	103	44	2.18	Middle and lower lobes of right lnng hepatized; returning crepi- tation in left lnng.
M'ch 14,9 P. M.		88	100.5	32	2.75	Whiskey f. 3ss every 2 hours.
March 15, A. M.	11	84	102	36	$\frac{1}{2.33}$	Repeat quinine grs. xx.
M'ch 15, 9 P. M.		72	100.2	40	1.80	
March 16, A. M.	I2	68	99.5	36	1.88	Left lung improving; condition of right lung unchanged.
M'ch 16, 9 P. M.		76	100.3	32	2.37	Profuse sweating.
March 17, A. M.	13	64	99	36	1.50	Profuse sweating.
March 18, A. M.	14	78	99	32	2.43	Profuse sweating.
March 19, A. M.	. 15	76	100	25	2.78	Profuse sweating.
March 20, A. M.	16	68	98	28	2.43	Ordered cit. quinine and iron gr. v. and cod liver oil f. 3ss 3 times a day.

	(CONTINUED.)											
DATE.	Day of Disease.	Pulse.	Tempera- ture.	Respira'n.	Pulse respiration,	SYMPTOMS, ETC.						
March 21, A. M.	17	68		24	2.83							
March 22, A. M.	18	68	99	24	2.83	Appetite returning.						
March 29, A. M.	25	76				Severe headache. Ordered brom. potas. grs. xxx ter die.						
April 1st.	28	80				Returning rales in right lung; left lung normal; convalescing, but still very weak.						

This case is a type of the severer form of croupous pneumonia. Defervescence did not begin until the 10th day from the initiatory chill, and cannot be said to have been completed until the 16th day, a period of six days, so that the termination of the febrile symptoms was by lysis rather than crisis. It is to be noticed, as bearing on the question of diagnosis between croupous and catarrhal pneumonia, that on the twelfth day, when the pulse had returned to 68, and the temperature to 99.5°, the diseased process in two-thirds of the right lung continued unabated. The record of the case shows most conclusively the antipyretic effect of quinine in gr. xx. doses, as well as of the tepid bath.

On the morning of the 7th day the thermometer indicated a temperature of 105.7°; gr. xx. of quinine was administered, and in the evening the pulse had fallen to 100 from 116, and the temperature to 102°, a decline of 3.7° in seven hours. So on the following day there was a similar fall of 1.3°.

On the morning of the 9th day the pulse was 112, and temperature 105°. Quinine having been given two consecutive days, it was deemed advisable to substitute the warm bath. In nine hours the pulse had fallen twenty beats, and the temperature four and seven-tenths degrees. This could not be attributed to the *crisis*—for on the morning of the 10th day, the fever again arose to 105°. On this day, the bath and quinine were both given, and devervescence set in. Carbonate of ammonia was given all through the attack, and beef tea and milk relied upon for nourishment—both being taken freely.

The pleuritic pain in this case was very distressing and was complained of in front, although the pneumonic inflammation was mostly posterior. Average pulse respiration ratio $\frac{1}{2.00}$

CASE III.—Croupous Pneumonia in the Lower Lobe of Right Lung, in a Young Child.

Alvin M., male, aged 3 years; plump, healthy child. Taken sick March 28, 1878. First seen March 29th, when pneumonia was developed in the lower lobe of right lung. Dyspnæa marked.

DATE.	Day of Disease.	Pulse.	Temper- ature.	Respir'n.	Pulse-respiration ratio.	SYMPTOMS AND REMARKS.
1878. March 29, A. M.	2	128	104	80	1.60	Warm bath ordered every 4 hours.
March 30, A. M.	3	128	101.7	40	$\frac{1}{3.20}$	
March 30, P. M.	3	140	104	56	1 2.50	Quin. gr. v. at one dose.
March 31, A. M.	4	148	103	40	$\frac{1}{3.70}$	do do do.
April 1, A. M.	5	120	100.3	40	3.00	do. do. do.
April 2.	6					Great improvement. Palse, etc. not recorded.
April 3. April 4.	7 8		101.5	28		Convalescent. Visits discontinued.

The antipyretic effect of the quinine was very decided, but does not show in the chart, for the reason that but one visit was made daily after its administration was commenced. The termination was by lysis—the period of defervescence extending over seventy-two hours, from the 5th to the 8th day.

Average pulse respiration ratio 1/4 and

Case IV.—Croupous Pueumonia in an Adult, Right Lung, Asthenic Form—Death on the 9th Day.

D. J. B., aged 56 years, American, rather slender built, weight, about 140 hs; conductor on street cars.

March 9th, 1878.—Had slight chill, followed by fever, cough and dyspæna. Continued to work until evening of March 10th, but "laid off" and went to bed March 11th.

DATE.	Day of Disease.	Pulse.	Tempera-	Respira'n	Pulse respiration ratio.	TREATMENT AND REMARKS.
March 12, A. M.	4	108	104.8	30	1 3.60	Crepitant rale with marked dullness over middle lobe of right lung. "Prune jnice" expectoration—harassing cough; dyspnæa marked; anxious countenance. Ordered quin. grs. xx. at one dose. Carb. ammon. and milk punch freely. Repeat quinine grs. xx. Beef tea and stimulants ad. lib.; dusky flesh on cheeks, eiled silk shirt around chest.
M'eh 13, 2 P. M.	5	104	103.5	28	$\frac{1}{3.71}$	Upper and middle lobe right lung solid, and crepitant rale heard in lower lobe. Dyspnea greatly in- creased. Expectoration of same character and more in quantity.
March 14, 12 M.	6	108	104	32	$\frac{1}{3.37}$	Condition about the same; expector ation same; cough very troublesome, preventing sleep. Ordered tepid bath to be followed by quiuine grs. xx.; morphia and chloral mixture to control irritable cough. Beef tea and milk punch continued.
March 15, 12 M.	7	96	102,5		• • • • •	Expectoration less in quantity and not so bloody; cough in a measure relieved by anodyne mixture. Quantity of whiskey increased to oz. ss every two hours.
March 16, A. M.	8	100	103	34	1 2.94	Passed a bad night. Watchers went to sleep, so that he got neither medicine nor nourishment during the night. Got out of bed himself to get water. Right lung entirety hepatized; dyspnœa very di-tressing; cyanosis marked; larynx rises and falls during respiration; supraclavicular spaces sink in. Ordered camphorgrs. iij. in emulsion every two hours, and to push whiskey and beef tea. Dyspnœa still greater and cyanosis more marked. Treatment continued.
M'ch 16, 10 P. M.	8	104	103	36	2.88	Dying.
March 17, A. M.	9	120	103	40	$\frac{1}{3.00}$	Died at 2 P. M.

In this case there were prodromal symptoms for two weeks before the onset of the disease. The patient's habits of life had formerly been irregular, but for the past several years had been correct.

The record of pulse, temperature and respiration would not indicate a severe attack of the disease, but the accompanying symptoms of distress, cyanosis and "prune juice" expectorations pointed clearly to a severe case. The pulse, three hours before death, was but 120, and temperature 103°.

It is a matter of great regret that just at the most critical period of the disease—the night between the 7th and 8th day—he should have been neglected by the sleepiness of those in charge of him. Had the stimulants and nourishment been kept up regularly during this time, and the patient been prevented from getting up out of bed, a different result might reasonably have been expected.

The record of pulse and temperature shows a remarkably low average for a fatal case.

Average pulse respiration ratio $\frac{1}{3.25}$

Case V.—Croupous Pneumonia, Lower Lobe of Right Lung, in an Infant.

Ed. O'C., healthy infant, aged 22 months. Taken with chill followed by fever, March 29th, 1878. Supposed by family to have intermittent fever. Was not seen until 4th day, when pneumonia was found developed in lower lobe of right lung, crepitant rale being distinct, with dullness on percussion.

DATE.	Day of Disease.	Tempera- ture. Respira'n	Pulse respiration ratio.	REMARKS.
April 1, A. M	4 192	106 45	1 4.00	Warm bath and quin. grs. iv. at once.
April 1, P. M.	4 160	102,5 52	$\frac{1}{3.07}$	
April 2, A. M.	5 160	103 56	$\frac{1}{2.85}$	Repeat bath and quinine.
April 3, A. M.	6 112	98 40	$\frac{1}{2.80}$	Attendance discontinued.

Average pulse-respiration ratio $\frac{1}{3.18}$ Termination by crisis on the 6th day.

The violence of the symptoms on the 4th day, as indicated by pulse of 192 and temperature of 106°, were such as to create serious doubts as to the result; but the prompt effect of the warm bath and quinine in alleviating the alarming condition was altogether satisfactory.

The temperature fell 3.5° and the pulse 32 beats per minute in six hours, which was not due to the crisis of the disease, the temperature rising to 103° the following morning.

Case VI.—Croupous Pneumonia, affecting whole of Right Lung, in a Young Child.

Lonisa H., German parentage, 3½ years old; robust, healthy child. Taken sick with chill, followed by fever on the 1st of April. Was sent for on the morning of April 2d, on account of violent convulsion which had been preceded by vomiting.

D	AT	Е.		Day of Direase.	Pulse.	Tempera- ture.	Respira'n	Pulse respiration pratio.	TREATMENT AND REMARKS.
April	2,	Α.	М.	2	160	104			Convulsion and vomiting. Calomel
A pril	2,	Р.	М.		148	105.5			grs. i. every 4 hours; also brom. potas. grs. v., co. spt. aeth. gttxv. every 4 hours alternately with calomel.
April	3,	A.	M.	3	148	105.7			Diarrhea. Stop caloniel. Warm
April	3,	Р.	М.	• •	132	103.5			bath and quin. grs. v. Have been examining lungs at each visit, but found no sign of disease until now, when pnenmonia is discovered in the base of right lung. Carb. ammon. grs. iv. every
April	4,	A.	М.	4	140	105	56	$\frac{1}{2.50}$	4 hours. Dr. S. C. Busey in consultation. Quin grs. v. repeated. Syr. sen-
April	4,	P.	М.	• •	128	103.5	44	$\frac{1}{2.90}$	egae added to carb, ammon, mixt. Beef tea and milk punch for nour- ishment.
April	5,	A.	М.	5	144	105.8	7 6	1 89	Dr. Busey in consultation. Nearly whole of right lnng hepatized
April	5,	Р.	M.		132	103	56	$\frac{1}{2.35}$	Quin. repeated. Orders left to repeat quin. if fever increased, and it was done at 2 A. M.

	(CONTINUED.)												
DATE.	Day of Disease.	Tempera-	Respira'n	Pulse res- piration ratio.	TREATMENT AND REMARKS.								
April 6, A. M.	6 13	36 105,3	64	2.12	Dr. Busey in consultation.								
5 o'lock, P. M.	13	2 103.5	64	2.06	An attack of syncope, apparently from cough and dyspucea. Whiskey administered freely.								
9 o'clock P. M,	12	104	60	2.13	Has revived.								
April 7, A. M.	7 13	103.5	56		Dr. Busey in consultation.								
April 7, P. M.					Repeat quinine.								
April 8, A. M. April 8, P. M.	8 H 9	0 98 98	32	$\frac{1}{2.87}$	Dr. Busey in consultation.								
April 9, A. M.	9 12	101.5	56	1 2 14	Headache.								
April 10, A. M. April 11, A. M.	10 11 11 9	6 98.5	28	$\frac{1}{3.64}$	Returning rales in right lung.								

Average pulse-respiration ratio $\frac{1}{2.43}$

The bowels were loose from the start, sufficiently so to require use of starch water and landamm enemas and bismuth powders to check the frequency of the loose watery discharges. The pneumonic inflammation did not develop so as to be recognized until the evening of the 3d day, although the lungs were carefully examined each visit in consequence of the doubt as to the diagnosis. The local disease was confined to the right lung, but so crippled the entire lung that death was imminent from suffocation from the 5th to the 7th day of the attack.

The crisis occurred suddenly on the 8th day, with relief of all the symptoms except the frequent respiration, which was governed by the local disease in the lung. The effect of the quinine was very regular in reducing the temperature from 1.5° to 2.8° after each administration, this effect lasting about twelve hours. In this case the administration of the quinine was followed each time by quiet sleep of three or four hours—with a fall in pulse and temperature indicated.

Case VII.—Croupous Pneumonia at Base of Left Lung, in a Young Child.

Louis H., aged 5 years, strong, hearty child. Taken sick on the night of April 9th with chill. First seen evening of April 10th, when the crepitant rale was abundant at the base of the left lung.

DATE.	Day of Disease.	Temper- ature. Respir'n.	piration ratio.	TREATMENT AND REMARKS.
April 10, P. M.	2 140	103.5 44	$\frac{1}{3.18}$ F	laxseed poultice to chest. Fever mixture of sweet spirits of nitre and spirits mindererus.
April 11, A. M.	3 132	0.11	$\frac{1}{3.00}$	and opinio mindoorno.
April 12, A. M.	4 132	100.3 40	$\frac{1}{3.30}$	
April 13, A. M.	5 100	98.5 32	$\frac{1}{3.12}$ R	esolution of the lung disease commenced.

This case is interesting as illustrating the mild or abortive form of croupous pneumouia. The diagnosis was clear, but the diseased action in the lung was hardly set up, before it began to decline; and, on the 5th day, when the crisis occurred, he was to all appearance well.

I had an exactly similar case in the child of Mr. J. H. S., aged 4 years, the notes of which I have unfortunately lost. The initiatory fever in this latter case however rose to 105.5°, but the local disease aborted just as above, and the patient was well suddenly. I believe that many of the eases of so-called "ephemeral fever" referred to by the older writers, belong to this form of croupous pneumonia.

Tetmination by crisis on 4th day.

Average pulse respiration ratio $\frac{1}{3.12}$

Case VIII.—Croupous Pneumonia in Adult in Lower Lobe of Left Lung.

D. P. M., aged 58 years, cabinet maker by trade, slender build and rather delicate in appearance. Was taken with chill

April 15th, 1878. Had been troubled with a cough for two weeks previously.

DATE.		Day of Disease.	Pulse.	Tempera- ture.	Respira'n	Pulse res. piration, ratio.	REMARKS AND TREATMENT.
April 1≅, A	. М.	4	104	104	50	$\frac{1}{5.20}$	Preum. of lower lobe of left lung Quinine grs. xv.
April 19, A	М.	5	78	102.5	18	1 4.84	Cough troublesome with pain, left side. No rusty sputa.
April 20, A.	М.	6	104	103	18	$\frac{1}{5.77}$	Repeat quinine. Carb. ammon., grs v. every 4 hours.
April 21, A.	М.	7	41	100.5			Quinine ordered grs. iij 3 times a
April 22, A.	М.	7	63	93.7	16	$\frac{1}{4.25}$	Quinine ordered grs. iij 3 times a day. Profuse sweating.
April 25, A.	М,	11	59	98	12	$\frac{1}{4.33}$	

Average pulse respiration ratio, $\frac{1}{188}$

This patient was very weak and recovered strength slowly. The previous history, as indicated by the symptoms of bronchial catarrh preceding the onset of pneumonic inflammation, would seem to point to catarrhal pneumonia, but rapid course of fever, terminating in *crisis*, between the 7th and 8th day, clearly establish the diagnosis of croupons pneumonia. As in Case 1V, there were present prodromal symptoms for two weeks before the iniatitory chill. Defervescence carried the pulse and respiration below the normal.

Case IX.—Croupous Pneumonia in an Adult in Lower Lobe of Left Lung.

John D., 45 years of age. Never sick, but not robust. Was taken with a chill April 18th, 1878. First saw him April 20th, when he was sufering with acute pain in left side, *in front*, painful cough with rusty sputa. Auscultation discovers pneumonia in the lower lobe of the left lung.

DATE.	Day of Disease.	Pulse.	Temper- ature.	Respir'n.	Pulse-res- piration, ratio.	TREATMENT AND REMARKS.
April 20, A. M.	3	120	103.2	18	1 6.66	Fever mixt. of sweet spirits nitre and liq. am. acet. Chroral and morphia to relieve pain.
April 21, A. M.	4	120	104.5	28	$\frac{1}{4.33}$	Quin. gr. xv. at one dose.
April 22, A. M.	5	116	103.2	28	$\frac{1}{4.14}$	Quin, gr. xv. repeated. Left lobe of left lung hepatized.
April 23, A. M.	6	120	102	30	$\frac{1}{4.00}$	Quin. gr. xv. repeated. Carb. ammon. gr. v. every 4 hours.
April 24, A. M.	7	92	99	24	$\frac{1}{3.83}$	Diarrhea. Profuse sweating. Carb. aumou. stopped. Quinine gr. iij. 3 times a day. Beef-tea and milk punch.
April 25, A. M.	8	68	95.5	12	$\frac{1}{5.66}$	Returning crepitation in lung.
April 28, A. M.	11	* * *			,•	Patient down-stairs sitting, but very weak. Crepitation rale still distinct in lower portion of left lung.

Average pulse, respiration, ratio $\frac{1}{4.77}$

Termination by crisis on the 7th day. On the 8th day the temperature fell to 95.5°, with respirations only twelve per minute. There is a very great similarity between this case and the preceding one, the recovery from the lung disease being protracted. Defervescence below the normal, both as to temperature and respiration.

Case X.—Croupous Pneumonia in Upper Lobe of Right Lung in a Young Child.

Samuel S., aged 3 years, robust, healthy child. Had attack of spasmodic croup May 24th. Was taken with chill, followed by fever, quick breathing and flushed face May 26th, 1878.

DATE.	Day of Disease.	Pulse.	Tempera- ture.	Respira'n	Pulse respiration ratio.	REMARKS.
May 27, A. M.	2	148	103,8	44	$\frac{1}{3.36}$	Warm bath ordered.
May 27, P. M.	• -	132	101.5	44	$\frac{1}{3.00}$	Pneumonia of upper lobe right lung.
May 28, A. M.	3	148	102	52	1 2.84	
May 29, A. M.	4	152	104.5	72	$\frac{1}{2.10}$	Wet towel around chest renewed every two hours; carb. ammonia mixture.
May 29, 9 P. M.		132	102	56	$\frac{1}{2 \ 35}$	
May 30, A. M.	5	120	101.7	40	$\frac{1}{3.00}$	
May 31, A. M.	6	120	101.7	40	$\frac{1}{3.00}$	
June 1.	7	104	99	40	$\frac{1}{2.60}$	Resolution of lung disease prompt and complete.

Average pulse respiration ratio $\frac{1}{2.78}$

Termination by crisis on the 7th day.

Attention is called to the application of the wet towel in infants as a substitute for bathing. This child struggled and fought so against the bath that it was deemed unwise to persevere in its use, the excitement attending its administration antagonizing its good effects. A large towel was folded lengthwise, dipped in water at temperature of 80° and wrapped around, the chest being covered with dry flaunel. This was changed every two homs, with the most satisfactory effect. The child does not rebel against this treatment, it is quickly done, and in my experience, is a most valuable aid in reducing temperature in infants.

When we bear in mind that in early life the limbs bear a much smaller proportion to the body than in adults, and that in children the intensity of fever is greatest in the body and head, the value of this mode of application becomes apparent, and when conjoined with cold applications to the head, fulfills the whole indication of the antipyretic use of water. I am speaking

only of young children, and in them this has been a favorite method of controlling fever for several years. Of course, where the fever is the more intense, the wet towel must be changed the more frequently.

Case XI.—Cronpous Pneumonia, occurring during the incubation of Measles and followed immediately by that disease.—Pneumonia in middle lobe of right Lung.

W., aged 3 years, girl, healthy child. Has been exposed to contagion of measles for a week, another child being down sick with it in the same house. Has had fever every other day for several days, and a teasing cough.

Was taken June 1st, in the morning, with a chill, and about uoon had a violent convulsion.

DATE.	Day of Disease.	Pulse.	Tempera-	Respira'n	Pulse respiration ratio.	TREATMENT AND REMARKS.
June 1, 1878	1					Convulsion following chill. R.— Brom. potas. grs. vi., elix. val. ammon. f.3i. every 3 hours for 3 doses. Rested well all night.
June 2, 12 M,	2	224				Capillary congestion almost as dark as scarlatina. Cincho, quin. grs. iij. every 6 hours; spts. aeth. nit.
June 2, 4 P. M.		200	104			and liq. annuon. acet. for febri- fuge; occasional deses o bromide with tr. opinm gtt. iij.
June 3, 9 A. M.	3	180	105			The state of the s
June 3, 12 M.			103.3			
June 4, 2 A. M.		180	104.3			Quinine grs. iij.
June 4, 8 A M.		144	101.4			Irritating cough of most distressing
ound 4, O M M.		144	101.3			character and almost continual;
June 4, 10 A. M.		160	100		••••	child greatly exhausted; percussion dull over middle lobe of right ling, which also gives crepital rale on anscultation. Ordered tr.
June 4, 5 P. M.		154	105			opii deod gtt. iv. every 4 hours until si asmodic congh is relieved. Cincho quin. grs. iij.; carb. ammon. and syr. senegae in emnlsion; soap
June 5, 5 A. M.	5	1.10	99.5			liniment freely to chest.
<i>'</i>					1	Cough still distressing, no appetite. Occasional doses of opinm as re-
June 5, 12 M.	••	136	98.3	30	4.53	quired; beef tea and milk punch ad libitum.
June 5, 5 P. M.			99.8	36		Dr. C. E. Hagner in consultation.
June 6, 8 A. M.			98.4	- 1	$\frac{1}{3.35}$	Dr. H. in consultation. Treatment continued.
June 6, 8 P. M.	• •	150	103	14	1 3 40	Ernption of measles beginning to appear. Resolution taking place in lung.

(CONTINUED.)										
DATE.	Day of Disease.	Pulse.	Tempera- ture.	Respira'n	Pulse respiration ratio.	TREATMENT AND REMARKS.				
Jnne 7, 6 A. M.	7	120	100	30	$\frac{1}{4.00}$	Dr. H. in consultation.				
June 7, 10 P. M.		160	103.2	60	$\frac{1}{2.66}$	Warm bath.				
June 8, 1 A. M.	8	160	103.2	70	1 2.28	Quinine grs. iij.				
June 8, 8 A. M.										
June 8, 5 P. M.		164	104	72	2.25	Collapse in middle lobe of right lung.				
June 8, 8 P. M.		170	105.2	70	$\frac{1}{2.42}$	Quinine grs. v; carb. ammon. mixt. and stimulants freely.				
June 9, 2 A. M.					2.40					
June 9, 6 A. M.	• •	128	99.6	54	$\frac{1}{2.37}$	Oiled silk shirt.				
June 9, 8 P. M.		144	101	36	4.00	Snlph. quin. grs. v.				
June 10	10	120	98.2	36	$\frac{1}{3.33}$	Eruption fading; appetite returning. Phosphat. emulsien of codliver oil.				

Pulse-respiration ratio 1 8 83

Crisis occurred on the 5th day of the pneumonia. On the 6th day from the initiatory chill the eruption of measles began to appear, with an increase of temperature to 103°. On the 8th day collapse of that portion of the lung affected by the pneumonia occurred, with sudden aggravation of all the symptoms. The most noticeable effect of the vubeola poison in the system was the intense irritative congh—the regular measles cough so greatly aggravated that the father, who is a physician and watched the case most carefully, thought several times that she must die from exhaustion. This cough was relieved by full doses of opinm and gradually disappeared as the eruption faded. The collapse of the hing was the only other symptom which could be ascribed to the complication of the two diseases. each disease with these two exceptions-of the intense irritative cough and the collapse-running a normal course as though the patient had but the one at a time. I must confess that I watched the development of the measles with great anxiety, fearing and expecting the occurrence of an acute catarrhal pneumonia which would have proved quickly fatal in the weakened condition of the little patient.

The collapse of the lung rapidly disappeared under the free administration of tonics and stimulants.

The subsequent progress of this case was entirely favorable, and at this date (July, 1878), no trace of the severe illness remains, except a slight roughness of voice.

The following tables present in a condensed form an analysis of the more prominent symptoms occurring in the foregoing cases:

CASE.	Age.	Sex.	Average Pulse. *	Average Temp *	Average Polse Resp'n Ratio.	ONSET OF DISEASE. PORTION OF LUNGS AFFECTED.
1	48	F	99	103.3	$\frac{1}{3.87}$	Sudden; ushered Lower lobe right lung principally; left lobe
11	37	М	105	103.4	$\frac{1}{2.80}$	Not sudden; chill, Lower lobe of left lung after which and middle and low-
					1	worked 4 days before taking to bed.
111	3	M	133	102 6	2,50	Sudden; if chill Lower lobe right lung. did rot know.
IV	3 6	М	106	103.4	3.25	Prodromal symp-Whole of right lung. toms for 2 weeks; slight chill at
v	22§	М	170	103.8 f	$\frac{1}{3.18}$	onset. Sudden; chil. Lower lobe right lung.
VI	$3\frac{1}{2}$	F	123	104.3	$\frac{1}{2.43}$	Sudden; chill ush- ered in by con-
VII	5	M	135	102.3	$\frac{1}{3.12}$	vulsions. Sudden; chill. Lower lobe left lung.
VIII	58	M	95	102.5	4.58	Chill; prodomata Lower lobe left lung. for 2 weeks.
ΙX	45	М	119	103.2 ‡	1 4 77	Sudden; chill. Lower lobe left lung.
X	3	М	136	102.4	$\frac{1}{2.78}$	Sudden; chill, pre- ceded by spas-
XI	3	F	178	103.3	2.83	modic croup. Chill; convulsions, preceded by a remittent fever; Middle lobe of right lung.
* 4 ***	no cre	77	ulsa	and ton	popotupo e	sudden.

^{*} Average pulse and temperature are estimated to time of beginning defervescence. & Months.

f On the 4th day of case V the temperature arose to 105°, the highest observed in any of the cases.

In case IX, on the 8th day, the temperature fell to 95.5°.

CASE.	PAIN.	COUGH.	SPUTA.	TERMINATION.
CABE	PAIN.	Coodii.	Brota.	TRIMINATION.
1	Right side in front. Not severe.	Neither frequent nor distressing.		By crisis on 8th day, defervescence last- ing 48 hours. Profinse sweating. Recovery prompt.
11	Very severe in cardiac region.			By lysis; defervescence began on 10th day, and was not complete until 16th day, a pe- riod of 6 days. Pro- fuse sweating.
111	Unable to lo- cate it on ac- count of age.		Not seen.	By lysis from 5th to 8th day, occupying 72 hours.
	Severe, but marked by dyspnæa.	sing, of irri- table char- acter.	in character. Very abnn- dant.	Death on 9th day from asphyxia.
V	Not noticed.	Insignificant.	Not seen.	By crisis on 6th day. Defervescence less than 24 hours.
VI	Not noticed.	Tromblesome.	Not seen.	By erisis on 7th day. Defervescence less than 24 hours.
V11	None.	Insignificant.	Not seen.	By crisis on 4th day. Defervescence less than 24 hours.
VIII	Pain in left side anter- iorly.	Trouble so me from giving pain.		By crisis on 7th day. Defervescence less than 24 hours. Pro- fuse sweating.
IX	Pain severe in left side auteriorly.	Painful cough	Rusty.	By crisis on 7th day, Defervescense less than 24 hours. Pro- fuse sweating.
X	Not noticed	Insignificant.	Not seen.	By crisis on 7th day. Defervescence less than 24 hours.
XI	Not noticed.	Congh paroxysmal, irritative, most har as s in g and exhausting. Constituted a dangerons element in the disease.		By crisis on 5th day. Defervescence less than 24 hours.

An examination of these tables of summary of symptoms shows:

1st. As to age, that six of these cases were between the ages of one and five years. Five cases were adults between ages of thirty-seven and fifty-eight years. There was no case between the age of five and thirty-seven years.

- 2d. As to *sex*, eight were males and three females, or a percentage of males of 72.7 to 27.3 of females.
- 3d. Pulse.—The average pulse during the febrile stage for the adults was 105, while the same for the children was 145 beats per minute.

Nothing peculiar was noticed as to pulse, except that in the asthenic cases it was slower than in the sthenic cases, whereas it might naturally have been expected to be more rapid from the enfeebled state of the patient. The pulse kept pace very regularly with the temperature curve.

4th. Temperature.—The average temperature for the cleven cases to the commencement of defervescence was 103.1°, the highest recorded being 106° in an infant of twenty-two months, and the lowest 95.5° in Case 1X, where the crisis oscillated the temperature to three degrees below the normal without apparent detriment to the patient. The typical morning depression and evening rise in temperature were interfered with by the anti-pyretic treatment and hence do not show in the record.

5th. Pulse-Respiration Ratio.—In the normal state of health the relation between the pulse and respiration is that of 1 to 4½, the pulse being taken at 72 per minute and respiration at 16, for an adult. About the same proportion exists in children, both being increased in the same ratio according to age.

The same thing is true in regard to febrile diseases which quicken the heart beats and breathing. The relative proportion is maintained as long as there is found at the same time no morbid condition of the thoracic viscera, but as soon as heart or lungs become implicated by diseased processes, the normal pulse-respiration ratio of one to four and a half is destroyed, and in the case of lung disease, other things being equal, the degree of variation becomes an accurate measure of extent to which the lung tissue is implicated.

It is, therefore, a most valuable factor in the early diagnosis of the form of lung inflammation at present under consideration, especially because, being an infectious fever, *ab initio*, the local lesion does not become apparent in many cases for two or three days (as in Case VI of this report) and the symptoms may all be referable with equal propriety to any of several of the zymotic fevers.

While, however, other symptoms fail to furnish any differential clue as to the precise nature of the fever, which we are about to be called upon to battle with, if the ratio between the pulse and respiration is augmented to any marked degree, we may be sure that in a very short time there will be found the crepitant rale, and dullness on percussion over some portion of the chest.

We have above an average pulse respiration ratio in the whole number of cases of $\frac{1}{3.33}$, but it would be more exact as exexpressing the true ratio existing between the pulse and respiration, in typical cases running a regular course, if we exclude cases V111 and 1X, which are exceptional in presenting a pulse-respiration ratio less than normal, being respectively $\frac{1}{4.77}$ and $\frac{1}{4.88}$ Leaving out of account these two cases, we have from those remaining an average $\frac{1}{3.00}$, which probably expresses very nearly the true ratio existing between these prominent symptoms in eronpous pneumonia.

6th. The onset of the disease.—An examination of the above table will show that the attack was ushered in suddenly by a chill in eight of the cases, and in two (VI and XI) in children, the succeeding fever was accompanied by convulsions.

In three cases, the commencement was gradual, in two of which (IV and VIII) there were decided prodromal symptoms for two weeks.

A chill was present in all the cases, except the third, and in that it was not observed, although from the age (3 years) of the child, it might easily have been overlooked.

7th. The lung or part of lung affected.—The whole of the right hing was involved in two cases, one of which proved fatal.

Upper lobe of right lung attacked	3	times.
Middle lobe of right lung attacked	4	6.6
Lower lobe of right lung attacked	6	
m - 1		
Total	13	6.0
Upper lobe of left lung attacked	.()	times.
Lower lobe of left lnng attacked		
	_	
Total	.0	66

In several instances more than one lobe was inflamed in individual cases, so that the whole number of lobes attacked in the eleven cases was eighteen. Marked preference is shown for the lower lobes, they being singled out in eleven out of the eighteen times.

Both lnngs were affected in two cases. The right lnng was involved eight times, and the left lung five times, giving a proportion between the two of eight to five, which corresponds very nearly with the statistics of the latest authorities.

8th. Pain.—In none of the cases occurring in children, was pain in the chest observed, and if present in any degree was certainly not severe, and could not be located.

In all the severe cases in adults, pain was a prominent symptom, and a cause of much suffering.

In every case where present, it was felt in front to one side or the other of the median line, according to the lung affected, while the pneumonic inflammation invariably approached nearer the surface—posteriorly.

9th. Cough.—Nothing peculiar to the disease under consideration appeared in the cough. It was present in all the cases, but in those unattended by severe pain from the pleuritic complication, it was insignificant. Where pain was marked, the cough became the most distressing, by aggravating a torment, which was quiescent as long as the patient remained undisturbed. In the fatal case, the cough was peculiarly harrassing, being almost constant, of a hacking character, and only absent from the influence of narcotics.

In the 11th case, the character of the cough was evidently influenced by the measles complication, and was of so serious a nature, that dangerous exhaustion resulted.

10th. Sputa.—Children under the age of five years very rarely expectorate, and in the six infantile cases no sputnm was seen, although in some it was evidently abundant from the loose cough, and was swallowed. Of the five adults it was colored by blood in three cases, and not so in two.

In ease IV, it was abundant, like "prune juice," and in the result verified the unfavorable prognosis of older writers from the presence of this symptom.

11th. Termination.—Termination was by erisis in eight cases;

by lysis in two, and death one. The crisis occurred in the first set as follows:

In 1 case on the fourth day.

In 1 case on the fifth day.

In 1 case on the sixth day.

In 4 cases on the seventh day.

In 1 case on the eighth day.

In the second set of two cases, terminating by lysis, the defervescence began in one on the 5th day and was complete on the 8th; and in the other case did not commence until the 10th day and was not complete until the 16th.

The exact time occupied by defervescence, where less than twenty-four hours, could not be determined, on account of sufficiently frequent daily visits not being made; nor, for the same reason, could the hour of the day when defervescence began be definitely fixed, but according to the reports of the nurses the improvement began shortly after the morning visit (11, A. M.), and continued through the night, taking the place of the usual evening exacerbation.

In seven cases, the time occupied in the reduction of temperature to the normal degree was *less* than twenty-four hours; in one case it was forty-eight hours; in one, seventy-two hours, and in one six days.

Profuse sweating accompanied the defervescence in four cases, which were also the most severe.

It will appear from the above record that the crisis may occur anywhere from the 4th to the 10th day, the 7th day being the one on which it most frequently takes place; also that the time of defervescence in a particular case is influenced by its severity, being earlier in mild cases and retarded in the graver forms.

Jürgensen (Ziemsen's Cyelop., vol. v., p. 54) gives a table of 721 cases, terminating all the way from the 2d day (eight cases) to the 18th day (two cases), of which 165 came to an end on the 7th day.

The cases above reported are susceptible of division into two groups, viz: sthenic and asthenic. In the former group are eight cases, including all the infants, which present no peculiarities, but are typical cases of cronpons pneumonia.

In the latter group, the asthenic, are three cases (IV, VIII, IX)

which differ from the former in several important respects worthy of especial notice. Two cases (IV and VIII) were preceded for two weeks by prodromata of bronchial catarrh and malaise, which statistics show to be not common in this form of pnenmonia.

In all three the pulse, temperature and respiration were very low, considering the gravity of the eases. In Case IV the pulse ranged from 96 to 120, the latter rate being but a few hours previous to death, when the the temperature was but 103° and respiration 40.

In Cases VIII and IX, the average pulse respiration ratio is $\frac{1}{6.88}$ and $\frac{1}{4.77}$ respectively, being in both less than that of health.

In Case VIII, defervescence carried the pulse down to 52 and respiration down to 12 per minute, and in Case IX the temperature fell to 95.5° and respiration to 12—all below normal.

A report of this character does not allow space for a full discussion of the question of diagnosis which might be opened by the consideration of these latter three cases, but it is clearly suggested, from a clinical point of view, that eases do continually occur where the diagnosis between cronpous and catarrhal pneumonia will hinge upon the termination by crisis or lysis—about the usual time for such termination in the natural history of the former disease.

In Cases VIII and IX the termination was by crisis on the 7th day. In case IV death on the 9th day, but the history and symptoms so closely parallel the other cases that the diagnosis is not in doubt, and could life have been prolonged a day or two longer, there was every reasonable hope that the crisis would have taken place.

As to the preceding bronchial catarrh, whether that was a true prodroma or merely an *ante hoc*, is an open question—for there is no reason why croupous pneumonia should not be developed during the existence of a bronchitis, the same as though the latter did not exist, or just as in case XI it made its attack during the forming stage of measles.

Treatment.—It is of the utmost importance in connection with the treatment of cronpous pneumonia, to take into consideration its natural history. It is an intensely febrile disease, selflimited—running its course more rapidly perhaps than any other zymotic disease, and terminating with abrupt suddenness about the seventh day.

This order of sequence in the symptoms we may confidently predict under *any* plan of treatment not absolutely injurious, for the prognosis is in healthy subjects most favorable, being even more so in children than in adults.

It is a disease in which the physician can well afford to bide his time, and bear out the old rule, which I had firmly impressed upon me, when a student, by my venerable preceptor, the late Dr. Joshua Riley,—"To be sure if you can do no good, at least to do no harm."

There is no malady in the catagory of medicine, which yields to the medical attendant so much honor from the patient and his friends as the one under consideration, because in the very height of severe illness, the fever often reaching its maximum just before the crisis, the sick man is suddenly well, and of course the doctor and his last remedy get the credit for the cure.

Nor is it inifrequently the case that the physician himself is deceived, taking the post hoc for the propter hoc, and thinking that he has found a specific remedy. Happily this multiplication of specific remedies has received a check by the attention now given to the study of the natural history of disease, and tendency is to reduce rather than add to the already cumbersome materia medica by interposing a more correct knowedge of what would be the symptoms, course and termination in typical cases uninfluenced by drugs.

With regard to the disease which is the subject of this paper, this has of late years been very clearly set forth, and the duty of the medical attendant in the premises is very much simplified.

It is to guide the case, guard against excessive fever, support the strength and watch for complications, in other words antipyretic and supporting. The danger to be apprehended is principally two-fold, indirectly from cardiac debility due to intense fever and hing obstruction, and directly from the extent of the ling disease.

The high temperature is to be combatted by baths and quinine. A reference to the temperature record of the above cases shows characteristically the effect of this treatment upon the fever heat, but it does not and cannot express the great relief accompanying it to the patient, of distressing symptoms. I have never used *cold* baths in this disease, but have prepared water at a temperature of 90° and reduced it ten degrees during the fifteen minutes occupied in administering it.

Not that I believe any risk would be run by making the bath cold, but experience goes to show that quite as great reduction of temperature is obtained from the above graduated bath, with certainly greater comfort to the patient, and less violence to the prejudices of friends.

If we consider for a moment the modus operandi by which the bath is an effective measure in reducing temperature, I think we will be disposed to admit that the warm bath should have the preference.

The *skin* is the organ by which the balance of temperature is preserved between the internal structures and external surface, and through the agency of the blood. A very great extent of surface in the capillary vessels of the skin, is exposed to the cooling influence of the external air with every pulsation of the heart, and the extent to which the surplus heat of body combustion is got rid of, is exactly in proportion to the amount of blood so exposed to the air in the skin, and the condition of the skin at the time.

The application of cold contracts the capillaries of the skin, and drives the blood away from the surface towards the internal organs.

This is the effect of a cold bath, and although the reduction of temperature in the blood still remaining in the skin is greater than from a tepid bath, still the aggregate effect will be less.

The warm bath relaxes the skin and invites blood to the surface, while the difference in temperature between water at 90° and fever heat (104° or upwards) is quite sufficient to give a decided clinical result.

In addition, the absence of shock and greater feeling of comfort to the patient is an advantage of the warm bath not to be overlooked.

In some of these cases, where the convenience of a bath tub

was not to be had, a common washing tub was used, the patient sitting in it, covered over the shoulders with a blanket, and this was found to be an efficient substitute.

Whenever the patient became prostrated from the fever, or oppressed by the dysphæa, the baths were discontinued and quinine relied on as an antipyretic. In children, if the baths were the occasion of struggling and screaming, they were not insisted on, the wet towel* and quinine being resorted to.

The dose of quinine given to adults was from grs. xv to grs. xx, and was found to be sufficient.

The reduction in temperature varied in different cases from 1.5° to 4.7°, and lasted about fourteen hours from the time of administration. A dose given at mid day would show decided effect in three hours, reach its maximum at 9 o'clock, P. M., and the temperature would begin to rise about 2 o'clock, A. M.

In the severer cases the temperature would be again the following morning as high as before its administration. In the milder cases the fever did not appear to rise as high any more after the first dose of quinine.

In some of the eases, especially marked in Case VI, it produced a decided hypnotic effect, every full dose being followed by quiet sleep.

Dr. S. C. Bussey, who was in consultation in this case, said he had frequently noticed the same effect. He had had his attention first called to it by Dr. Jas. C. Hall, of this city, a most acute observer, who had been in the habit for years of giving quinine at bedtime, with the double purpose of promoting sleep and at the same time avoiding the annoyance of noises in head occasioned by this agent.

Stimulants were administered as required. Carbonate of ammonia as a special cardiac stimulant where the respiration was embarrassed.

Milk and beef tea were relied on for nonrishment.

Scason of the Year. All the cases here reported occurred between the months of February and June inclusive, and eight out of the eleven were attended in March and April, four for each month.

⁻ See Case X

One case was noted in February, one in May, and one in June, the latter having its onset on the first day of the month.

From the occurrence of the last case to the present date (September 10th) I have seen but one case, a child three years of age, who was taken sick August 28th.

By courtesy of the Health Officer of the District of Columbia, Dr. Smith Townshend, I am enabled to append a report of 1915 deaths from pneumonia during a period of six years and eight months, from January 1st, 1872, to July 31st, 1878.

DISTRICT OF COLUMBIA, BOARD OF HEALTH. OFFICE OF HEALTH OFFICER.

Washington, August 10th, 1878.

Dr. D. W. Prentiss, 1224 Ninth Street N. W.

Sir—In reply to your letter of the 2d inst., I transmit herewith table showing number of deaths from pneumonia in the District of Columbia from January 1, 1872, to August 1, 1878.

Prior to August, 1874, there was no law requiring physicians to furnish certificates of deaths to the Health Department, and no permits for burials were required, hence the "table" is not reliable prior to that date, although it contains every case reported to the Health department to that date. Regretting my inability to furnish more complete information,

I remain, very respectfully,

Smith Townshend, M.D., Health Officer.

Statement of Deaths from Pneumonia in the District of Columbia, January 1st, 1872, to July 31st, 1878.

YEARS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
1872	12	21	20	22	17	11	1	9	3	10	9	16	151
1873	27	14	13	13	6		6	2	4	5	7	13	110
1874	22	14	26	19	19	2	6	*18	9	20	18	40	213
1875	81	69	87	47	19	17	4	14	14	24	28	42	446
1876	51	52	78	- 66	41	8	7	11	14	16	22	31	397
1877	58	61	54	33	25	18	C	7	5	13	21	26	327
1878	48	40	45	34	49	35	20						271
		_				_			—				
Totals.	299	271	353	234	176	91	50	61	49	88	105	168	1915

^{*}Absolutely correct from August 1874, to and including July, 1878. Prior to August, '74, the records were very incomplete. Physicians not being required to make returns We have no records prior to 1872.

This statement would appear at first sight to indicate an extraordinary mortality for this disease in the District of Columbia; and such would be the fact, were they all cases of croupous pneumonia. It includes, however, all the forms of pneumonia—catarrhal pneumonia especially of old persons and young children, of invalids and consumptives, and not unlikely many cases of capillary bronchitis and pulmonary collapse. The statistical value therefore, in a mortuary sense, is lost, but the relative value as to frequency of occurrence at certain seasons of the year remains but little impaired.

Thus during the four months from January to April, inclusive, there are 1127 deaths to 788 for the remaining eight months, and for the six months from December to May, inclusive, there are 1471 cases against but 444 for the other six months, showing it to be a disease of winter and spring months.



